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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/004,113

DATE: 03/25/2002 | 5

TIME: 16:11:47

Input Set : A:\A70970.ST25.txt

Output Set:  $N:\CRF3\03252002\J004113.raw$ 

3 <110> APPLICANT: Engelhard, Eric Morris, David  $6\ < \!120 \times$  TITLE OF INVENTION: NOVEL COMPOSITIONS AND METHODS FOR CANCER 8 <130> FILE REFERENCE: A-70970/RMS/DCF 10 <140 - CURRENT APPLICATION NUMBER: US 10/004,113 11 -141 CURRENT FILING DATE: 2001-10-23 13 -150 - PRIOR APPLICATION NUMBER: US 09/747,377 14 (151) PRIOR FILING DATE: 2000-12-22 16 -: 150 - PRIOR APPLICATION NUMBER: US 09/798,586 17 -: 151 - PRIOR FILING DATE: 2001-03-02 19 4160 NUMBER OF SEQ ID NOS: 61 21 <170 - SOFTWARE: PatentIn version 3.1 23 - 210 - SEQ ID NO: 1 24 - 211 LENGTH: 32767 25 <212> TYPE: DNA 26 <213> ORGANISM: Mus musculus 28 <220> FEATURE: 19 <221> NAME/KEY: misc\_feature 30 <222> LOCATION: (2178)..(2262) 31 < 223 > 0THER INFORMATION: "n" at positions 2178 through 2262 can be any base. 34 <220> FEATURE: 35 <221> NAME/KEY: misc\_feature 36 <222> LOCATION: (14746)..(15383) 37 <223> OTHER INFORMATION: "n" at positions 14746 through 15383 can be any base. 40 - 220> FEATURE: 41 <221> NAME/KEY: misc\_feature 42 -222> LOCATION: (28120)..(30598) 43 <223> OTHER INFORMATION: "n" at positions 28120 through 30598 can be any base. 46 - 220> FEATURE: 47 <221> NAME/KEY: misc\_feature 48 <222> LOCATION: (32397)..(32767) 49 - 223 > OTHER INFORMATION: "n" at positions 32397 through 32767 can be any base. 52 - 400> SEQUENCE: 1 53 octotoaaac tottggtaat totootgott oggoacgotg gggaotggga ctacacotgt 60 55 qtqccaccat gqctqqctat ttctctctct tqaacactqq aaqagtqctc agagtttact 120 57 qgatetggga gaagetegag getgggttat ggaageegge tetgettget eeageteagg

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240

300

360

420

480

540

600

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123 127 129 131 133 135 137 139 141 143 145 147 149 151 153 155 157 161 163	agtectggae cctcctgagt nnnnnnnnn getgtcatce cttggtttae taaaatgett ctggctgtgg gattettgag acagagaaae taacccagt cctatctatg accgaggaaa aaacaaaaae ttattetgtg cegggtactt atgaacttgt attettgage aaactctggg tgegtaggte gtcagaggga gggctagtgg	aggetetgge getgaggnn nnnnnnnn eageaetggg ttgagaetet teeagetat teaggtggeg ttegaggea ectatettgg getgggtaaa agetetaggt gaeaeeeaag taacaaaaee tgtatgggta eggetetggg	tgtgtagget nnnnnnnn nnnnnnnn gaggttgaag gteteaaaaa egagggaaee getggteta aaaacaaaae eaggggaage etggggagae gttgatgeae ecaaecatat ttteaeetge gaagaggaea gttgatgaea ecaagaggaea tttgtteeaaa tttgttgtgt gagagaeagea gagtaaetea aggeaggaeg	nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn	tttetateed nnnnnnnn nnetgtggtg aateacaggt gggactggga cetggaacte tcaggagaca teeaggatag aactaggtgt teegggatte ateaatgcaa ggacacacac ggggggggggggggggggggg	atcoccacce cotgocteag nnnnnnnn gctcccgagt tcaaggccag ggatggccag atacaaaaaag gaggcaggca ccaggtctac ggctagcctg gcaggctgt gcaggtgaca acaccacage taaatttat catatacatg gttacagaaa aggactctga ccaggcctga gctggcctga gctggcctga gctggcctga gctggcctga aggcagagaa taccctcttg gctgggcctg gctctgatgg	2160 2220 2280 2340 2400 2460 2520 2580 2640 2760 2820 2880 2940 3060 3120 3180 3240 3360 3360
123 125 127 129 131 133 135 137 139 141 143 145 147 149 151 153 155 157 161 163 165	agtectggac cctcctgagt nnnnnnnnn getgteatee ettggtttae taaaatgett etggetgtgg gattettgag acagagaaae taaceccagt cctatetatg acegaggaaa aaacaaaaae ttattetgtg cegggtactt atgaacttgt attettgage aaactetggg tgegtaggte gteagaggga gggetagtgg geaagtggtg	aggetetgge getgaggnn nnnnnnnn eageaetggg ttgagaetet teeagetat teaggtggeg ttegaggea ectatettgg getggytaaa agetetaggt gaeaeeeaag taacaaaaee tgtatgggta eggetetetggg caeagataea ceatgteeeg egttgttagt ggeaggegga gggeteagee ceagtggtae	tgtgtagget nnnnnnnn nnnnnnnn gaggttgaag gteteaaaaa egagggaace catgeettta geetggteta aaaacaaaac caggggaage etggggagae etggggagae gttgatgeae eaaaccatat ttteacetge gaagaggaea tttgttgtgt ggagaeagea gagtaaetea aggeaggaeg eaggeaggaeg eaggeaggaeg eaggeagg	nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn	tttetateed nnnnnnnn nnetgtggtg aateacaggt gggactggga cetggaacte teaggagaea teeaggatag aaetaggtgt teegggatte ateaatgcaa ggacacacac tggtggtgt acetgtgtag tagaactgga aaggacagge gtaagacagea gtteetgga tagacacea tteetgga tagacacea ttagacacea ttagacacea	atcoccacce cotgocteag nnnnnnnn gctcccgagt tcaaggccag ggatggccag atacaaaaaag gaggcaggca ccaggtctac ggctagcctg gcaggctgt gcaggtgaca acaccacage taaatttat catatacatg gttacagaaa aggactctga acaggcctga ccaggcctga gctagcctga gctagcctga gctagcctga gctagcctga gctagcctga aggcagagaa taccctcttg gctgggcctg gctctgatgg tgaccacaga	2160 2220 2280 2340 2400 2460 2520 2580 2640 2760 2820 2880 2940 3060 3120 3180 3240 3360 3420
123 127 129 131 133 135 137 139 141 143 145 147 149 151 153 165 163 165 167	agtectggae cctcctgagt nnnnnnnnn getgteatee cttggtttae taaaatgett ctggetgtgg gattettgag acagagaaae taaceccagt cctatetatg acegaggaaa aaacaaaaae ttattetgtg cegggtaett attettgage aaactetggg tgegtaggte gtcagaggga gggetagtgg gcaagtggtg gceacaaaga	aggetetgge getgaggnn nnnnnnnn eageaetgge ttgagaetet teeagetat teaggtggeg ttegaggea ectatettgg getggtaaa agetetaggt gacacecaag taacaaaace tgtatgggta eggetetetggg cacagataca ecatgteegg eagegggag gggeteagee ecagtggtaa ggetatet	tgtgtagget nnnnnnnn nnnnnnnn gaggttgaag gteteaaaaa egagggaaee getggteta aaaacaaaae eaggggaage etggggagae gttgatgeae ecaaecatat ttteaeetge gaagaggaea gttgatgaea ecaagaggaea tttgtteeaaa tttgttgtgt gagagaeagea gagtaaetea aggeaggaeg	nnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnnn	tttetateed nnnnnnnn nnetgtgtg aateacaggt ggactggaacte teaggagaca teeaggatag aaetaggtgt teegggatte acatacacac tggtggttgt acatggagaca tagaactgga aaggacagge aaggacage tagaactgga tagaacaccaa ttagagcagg	atcoccacce cotgocteag nnnnnnnn gctcccgagt tcaaggccag ggatggccag atacaaaaag gaggcaggca ccaggtctac ggctagcctg gcaggctgt gcaggtgaca acaccacage taaattttat catatacatg gttacagaaa aggactctga aggcagagaaa taccctcttg gctgggcctg gctgggcctg tgatggcctg tgatggcctg tgatgacaaaa taccctcttg gctgggcctg tgatgacaaaa taccctcttg	2160 2220 2280 2340 2400 2460 2520 2580 2640 2760 2820 2880 2940 3060 3120 3180 3240 3360 3360

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/004,113 DATE: 03/25/200

DATE: 03/25/2002

Input Set : A:\A70970.ST25.txt

171	gtagtgtgtg	tgtgtgtg	tgtgtgtata	cacatggtac	ttttttctat	ctatctatct	3600
173	atctatctat	ctatctatct	atctatctat	ctatctatct	ttgtgtctat	gtatctaata	3660
175	ataaattgat	ctatttaact	atgtagatat	caatccattg	atctatgtat	ctatcaactg	3720
1 '7 7	atgtgtatgt	atgtatggat	gtacctacat	gcgtacttga	ggcaggactt	aaagtagooo	3780
1/9	aggetageet	taccacattt	catagcagag	gatggtcttg	aacttcaggt	cctcctgtct	3840
181	ctacctcgtg	agtgctggga	ttacaggttt	gtgccaccac	geetggetta	ggaggttctg	3900
183	tggttagaat	ccaggatttc	actatcaact	gggccacatc	gtcagccata	ttcaatatgc	3960
185	tttcttttac	attettaett	atttactaca	aatgggtccc	aggaaccaag	gteggeaage	4020
187	ctgatggtga	gtgctcttcc	ctgctggctg	acttatttgc	tottttttt	tttttttt	4080
189	ttttctagac	agggtttctc	tgtgtagccc	tggctgtcct	ggaactcact	ttgtagacca	4140
191	ggetggeete	gaactcagaa	atctgcctgc	ctctgtcccc	aaccccaccc	ccagtactgg	4200
193	gattaaaggc	atgcgccaca	cgcccagete	ttatttgctc	ctttgaatta	aggteteatg	4260
145	tacacaagge	tgaccgttca	tgcacaatac	agctaaggct	tgctttgaat	ttotcagttt	4320
197	ctttcttcta	cccaacagtt	tctgagattt	caggtccgtc	ctatgtcatg	cccaggittt	4380
199	ttqtttqttt	gtttgtttgt	tttttggttt	tgttttgctg	tttttcaaca	cagagtttct	4440
201		ctggctatcc					1500
293	ctctgcctcc	ctagtyctgg	gttaaaggtc	cctgccatca	ccqtqaaact	taagcccagc	4560
		gtqqctqqaa		-			4620
207				_	caagatetea	-	4680
2019		ctgagccatc					4740
211		gcagtacaaa					4800
213		aatgaggttt					4860
215		gcccatcaag					4920
±1.7		ggatcaggag					4980
J19		acacagatge					5040
221		atgggtgggt					5100
223		ctgcatggag					5160
225	-	ttggggagca					5220
227		aggcatccag					5280
229		acceteatet			-		5340
		gtccatgtcc					5400
233		atgtgtacag					5460
	aaggtgtgac				ttattaagtg		5520
237	aggggcagag				cccaaccgaa		5580
239	taccagactc	agccaactgc	agaattccag	tccataacgg	cacctccttt	cctttctcag	5640
241	gagettacca	gagaggtete	accccaagcc	ttcaccccat	ctagagcaaa	tgcttatatc	5700
<b>443</b>	ccccatgttt	gctcagagca	gagcatggag	ggaccttcct	gtcaccagag	gcagaggcat	5760
<b>4</b> 5	tctgtatacg	tgcatacacg	cctctgtgtg	tgtgtgtgtg	tgtgtgtgtg	tgtatttggt	5820
247	acagatctaa	gcatagaaaa	ttgaaaagca	ttgaggttgg	tgattgaaag	gctcactgat	5880
249	gggcaagtcg	ggttcgagtg	egetaactgt	atgactctat	ggatccgaat	atcatgctgt	5940
251	tttggaaagg	aatgagggag	ctactgtttc	taaggaagag	aagaatgggc	accaagacat	6000
253		ggtgggacag					6060
255		gtgtggccag	-				6120
257		catagcaaaa					6180
159		gagetettee					6240
261		tgtaatgaga					6300
263		ataataaata					6360
265		aggaggagga					6420
267	tgggggaggt	ggtgcttgcc	tataatccca	gcacttggaa	ggctgaaaga	ggaaatcagg	6480

## RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/004,113 TIME: 16:11:47

DATE: 03/25/2002

Input Set : A:\A70970.ST25.txt

269	agttcctatg	cagetttage	ttatqtqaqc	ctttctcata	aaaccaagag	caaaaaaqca	6540
				gcttgtctag			6600
273				ggaggggctg			6660
275		, , ,	-	ctagagatata			6720
277		*		gaaaacatca			6780
279				gtctccattt			6840
281				getgetteat			6900
283				ctgcacatga			6960
285				acagatgato			7020
1187		, , ,		tgctggaccc			7080
289		-		caactqtctt			7140
291	, ,	, , ,		ctatgtgcat	, , ,		7200
293				gtatacatgt			7260
295				ctctccacct			7320
197				catgtgtgga			7380
299		, , ,	-	agacctggat			7440
501				taacacaggg			7500
303				ggcatcaaac			7560
305				accactacca			7620
307				caggagagac			7680
309				tgctgagaac			7740
311				gatttgagtc			7800
				tgggcttttc			7860
				ggccttttgg			7920
317				gtgtgtgtgt			7980
319				gaagggtcag			8040
321				ctaaattcag			8100
323				ttttgaggca			8160
				ctaggatgac			8220
327				ttaccacacc			8280
329				catgccctga			8340
331				atagcagcat			8400
333				tgcccacgat			8460
335				ggcaccctca			8520
337				aggetggtet			8580
339				agtgtgactc			8640
				agtgagagta			8700
343				acttggtgac			8760
345				gggacttgtc			8820
				gatggtcgct			8880
349		*		gactggtcag			8940
351					-		9000
353				ttgtgggcag cccaggagaa			9060
355				tgtggtggga			9120
357				ggctgcagtt			9180
359				atgtcttcat			9240
361				gcaccccggg			9300
363				cagttaccac			9360
				agaaatctcg			9420
211)	gytyyctyta	Clotatycty	acceyyyaat	agaaaccccg	gettetgete	ayyayyucca	J420

RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/004,113

DATE: 03/25/2002 TIME: 16:11:47

Input Set : A:\A70970.ST25.txt

Output Set: N:\CRF3\03252002\J004113.raw

367	ggctacaagg	ccttgaaaaa	ccctgaggcg	ggcggggcag	gtagggetet	gcatgcgcct	9480
369	ctctagaaat	taacctcctt	tctaccccag	accettetgg	cgtctctggc	ttcttcaagg	9540
371	accggctcta	aggetaette	ctggtacacc	ctggaccctc	cctccatcct	gaagggatca	46t)()
3 7 3	ttatottaaa	cotggtoctt	cccatcgact	gggtttgggg	gtaggggtgt	ttcaggatgg	3660
375	cctcagagag	caggagaaag	ttggagatca	gocaactact	geagageacg	actgtggagg	9720
3 7 7	aacagttaaa	tggactagca	aacacgaacg	ggccagaggc	agaaggactg	ctatgagttc	9780
379					gagttacaga		9840
331			-		accgggcgcg		9900
383					gacgtcatcc		ษษัก()
385	cectgggaga	egeegggetg	gctttgtgga	gaactgcage	gggctaagcc	gtgttgaaca	10020
3×7					gggccgccct		10080
389	gaccgccaac	ggcacggcag	aggetgtgea	gatteagtte	gggctcatca	gctgcggcaa	10140
391					gcatccgcta		10200
343	-				gegggeageg	-	10260
395					gacggcaacg		10320
3.47					gogoacgacg		10380
399					accgaggacc		10440
401					cacatogoca		10500
403					ctgagegege	-	10560
405					tegeteatea		10620
407					tteetgegee		10680
109					gagttccgct		10740
411					gggeceageg		10800
413					geeetggaae		10860
					acgegeeagg		10920
417					geatetetge		10980
			-		ctctgggctc		11040
					gccttggcta		11100
		_		-	teetteetgt		11160
425			-		gettettetg		11220
427					caatactgtc		11280
429				-	catagaccta		11340
					teatgageeg		11400
433					caccccccct		11460
					ggccagggga		11520
437					ggggcttttg		11580
439	-				gtggggttgt		11640
441					geteegggee		11700
			<del>-</del>		teceetttgt		11760
					ggggatcggc		11820
					ccctggtcca		11880
					cccggctggc		11940
					atgeacgeet		12000
					tgaaccggtc		12060
					atccagggcc		12120
					ggcgcctcct		12180
					ggcttgtgag		12240
	-				gatgggagcc	-	12300
					gggtggggcc		12360
	, ,,,			,	,,,-,,,,,	, ,,	



Use of n and r or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Yaa

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/004,113

DATE: 03/25/2002 TIME: 16:11:48

Input Set : A:\A70970.ST25.txt

```
L:125 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:127 M:341 W. (46) "n" or "Xaa" used, for SEQ ID#:1
L:543 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:545 M:341 W (46) "n" or "Xaa" used, for SEQ ID#:1
L:547 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L.549 M.341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:551 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L.553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:555 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:557 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L.559 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L.561 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L.563 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:565 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:989 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L.991 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:993 M.341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:995 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:997 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:999 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1001 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1003 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1005 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1007 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1009 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1011 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1013 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1015 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1017 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1019 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1021 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1023 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1025 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1027 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1029 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1031 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1033 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1035 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1037 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1039 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1041 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1043 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1045 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1047 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1049 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1051 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1053 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
L:1055 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1
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VERIFICATION SUMMARY

DATE: 03/25/2002

PATENT APPLICATION: US/10/004,113 TIME: 16:11:48

Input Set : A:\A70970.ST25.txt

Output Set: N:\CRF3\03252002\J004113.raw

L:1057 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 L:1059 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1